

PATENT SPECIFICATION

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NO DRAWINGS

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COMPLETE SPECIFICATION

Improvements in or relating to Medical Dressings

WE, PRICE BROTHERS AND CO. LIMITED, of Staplegrave Mills, Wellington, Somerset, a British Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to medical dressings of a kind intended particularly but not exclusively for use in the treatment of burns.

Proposals have been made for the use of a foam pad or mattress in the treatment of burns, a patient being allowed to rest upon such a mattress or pad as part of the treatment. Recovery of the patient from the burn is aided by the exposure to air and the support of the foam material, the foam material permitting free access of air to the wound.

Disadvantages however exist in connection with such proposals, in as far as they normally involve the use of specially designed exposure frames which are bulky and inconvenient to transport. These disadvantages can be a serious inconvenience, particularly when a large number of persons has suddenly to be treated simultaneously and/or treatment is required for persons prior and during their transit to a hospital.

An object of the present invention is to reduce such disadvantages and there is accordingly provided a medical dressing comprising a sterile body of foam material previous to air and located within a sealed package to maintain sterility pending use.

Preferably the foam material of the dressing of the invention is polyurethane foam and advantageously the cells of the polyurethane foam interconnect so that the foam itself is pervious not only to air or other gas, but also to liquids.

If desired the foam may be impregnated or otherwise treated with any required medicament or other material. The foam material can be provided with a backing material on one side thereof, suitably a fabric, for example, cotton or crepe material or a plastics sheet material having similar characteristics as to permeability as the foam material.

The dressing is preferably provided with means for securing it in a desired position on a patient, though any convenient way of securing it can be used so long as undue stresses and strains are not imposed upon the patient. The securing or fastening means can either connect with itself, as in the case of tapes and buckles, stud fasteners or interconnecting fabric fasteners of the so-called "touch-and-close" type (marketed under the Registered Trade Mark "VELCRO"), such as described in British patent specifications Nos. 721,338 and 883,298, where connectable parts are disposed at opposed edges of the dressing, or can be such as to adhere to the skin of the patient on opposed sides or all round the effected area. The former kind of fastener, preferably provided at the edges of the dressing to reduce or obviate lines of pressure on the patient, and suitably secured to the dressing by the backing material, is particularly suited for larger dressings, as for use in hospitals; the latter kind is more appropriate to smaller dressings such as may be kept available as in first aid kits for use at home or in the factory on relatively small burns.

Where the dressing is to be secured by adhesion, the backing material will extend beyond the periphery of the foam body and have adhesive material on the outer portions. The adhesive is preferably pressure sensitive

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and can be protected by a layer, for example of paper, which is peeled off before use; this layer can also serve to protect the surface of the foam body which is applied to the patient.

In a specific example, the dressing comprises a rectangular pad of polyurethane foam mounted on a piece of backing material of greater length than the pad, so as to provide a pair of tabs at the ends thereof. The tab surfaces on the same side as the pad have a layer of a suitable pressure-sensitive adhesive and two paper strips are disposed with their outer sides covering respective tabs and adjacent portions of the pad, and their inner sides overlapping each other. By peeling off the strips from the centre the bandage can be readily applied and secured without the need for touching the pad or the adhesive tabs.

Dressings of this general kind can have a wide variety of shapes and sizes. The pads and backing sheets can for example be circular. The thickness of the pad is preferably of the order of one-sixteenth of an inch but can be more when the dressing has a large area and substantial cushioning of the wound is required. Each dressing is as more generally indicated above, supplied sealed within an envelope or other suitable packing to maintain sterility before use.

In a further specific embodiment of the present invention the dressing comprises a sheet of foam material of approximately one half inch in thickness. It is pervious to air and fluids, the foam itself is by nature sterile, and it is maintained in such a state by sterile packing. One side of the foam sheet is provided with a backing layer of cotton fabric which ensures that when the bandage is folded or twisted to follow an irregular form there is no substantial localised stretching and consequent enlargement of the foam cells.

To enable the dressings to be retained in a desired position about a part of the human body, small lengths of "touch-and-close" fastening tape are provided at strategic points along the edges of the dressing, hook portions of the fastener being provided at one side and terry portions being provided at the other. When the dressing is wrapped round the body, hooked tapes from one side may be touched and closed to terry tapes from the other side. The use of such fasteners at the dressing edges provides a firm anchoring of the two sides of the dressing without either the use of undue pressure to effect the anchorage or the application of localised lines of pressure on the patient after such anchorage has been effected.

Dressings embodying the invention can comprise foam sheets of any convenient size and shape. Conveniently, a range of sizes and shapes can be provided so as to suit the parts of the human body. The provision of such

a range of sizes and shapes allows the human body to be swathed from head to foot in the dressings. The use of touch-and-close fastening means allows considerable latitude of adjustment so that it is unnecessary to provide a very large number of different sizes of dressings; the fastener allows a dressing of one particular size to be used on persons of different body size.

When such a dressing is applied to the burnt part of the body of a patient the healing process commences immediately. Air is able to reach the wound by means of the porous foam and any discharge from the wound is drawn off the capillary or other action, for example as a result of pressure differences. The movement of the body against the foam cells stimulates circulation in the body tissues and healing is thus further assisted. It is to be noted that the use of a foam of thickness sufficient to cushion the wound from physical shocks is desirable. Foams of approximately $\frac{1}{2}$ " thickness have been found to meet this requirement.

The impregnation of the foam with any medicament such as any of the conventional drugs for the treatment of burns provides a convenient way of ensuring that such a drug is constantly supplied to the wound. The porous nature of the foam enables a drug to be applied to the exterior of the foam and to reach the wound by capillary or other action. Consequently, it is not necessary to remove the dressing to continue treatment.

WHAT WE CLAIM IS:—

1. A medical dressing comprising a sterile body of foam material pervious to air and located within a sealed package to maintain sterility pending use.

2. A medical dressing comprising a sheet of foam material having a layer of backing material on one side thereof, the dressing being pervious to gas and liquids, sterile, and sealed within packaging means to maintain the same sterile pending use.

3. A dressing as claimed in claim 2, in which the backing material is cotton fabric.

4. A dressing as claimed in claims 1, 2 or 3, having fastening means secured thereto.

5. A dressing as claimed in claim 4, and claim 2 or 3, in which the fastening means are secured to the dressing by means of the backing material.

6. A dressing as claimed in claims 4 or 5, in which the fastening means comprises tapes having inner end portions secured to edges of the dressing and free end portions projecting beyond the edges.

7. A dressing as claimed in claim 6, having tapes at one side of the dressing arranged for "touch-and-close" engagement with tapes at an opposed edge of the bandage, the tapes being mutually interconnecting fabric form.

8. A dressing as claimed in claim 2 or 3,

- in which a portion of the backing material extends beyond the edge of the foam material and carries an adhesive for securing the dressing to a patient's skin.
- 5 9. A dressing as claimed in claim 8, in which the body is rectangular, the backing material extending beyond the edges of the foam material to form two tabs carrying the adhesive.
- 10 10. A dressing as claimed in claim 8 or 9, having two paper strips, each overlaying part of the foam material and an adjacent part of the backing material carrying the adhesive, the strips overlapping at their inner sides and being readily removable when the dressing is to be used.
- 15 11. A dressing as claimed in claim 8, 9 or 10, in which the foam material is of about one-sixteenth of an inch in thickness.
12. A dressing as claimed in any one of claims 1 to 10 in the form of a sheet not less than one half of an inch in thickness. 20
13. A dressing as claimed in any preceding claim in which the foam material comprises polyurethane.
14. A dressing as claimed in any preceding claim impregnated with a medicament. 25
15. A medical dressing substantially as herein described.

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